

### **REMARKS**

Upon entry of the present amendment, claims 25-39 are present in the case. Applicant has canceled claims 1-24. In view of the foregoing amendments and the present remarks, applicant requests entry of the present Amendment and allowance of all claims present in the case at an early date.

### **ARGUMENT FOR ALLOWANCE**

Applicant respectfully asserts that new claims 25-39 overcome the obviousness rejections set forth in the Office Action of October 17, 2006, under 35 U.S.C. 103(a), as being unpatentable over Wheeler (4,526,385) in view of Iverson (4,685,685). Specifically, the composite dynamic seal claimed in new independent claims 25, 26 and 33 now includes the novel and distinguishing feature of being “elastomer filled” in claim 25 and “filled” in claims 26 and 33. The “filled” feature of the composite dynamic seal is a patentable distinction with regard to the Wheeler patent, as well as the other patents cited by the Examiner. The Examiner correctly states in her Office Action of October 17, 2006 that the Wheeler patent “does not disclose that the PTFE is a filled PTFE or that the composite is aramid fiber filled HNBR.” In fact, the Wheeler patent teaches away from the present invention, in that Wheeler teaches and requires that the inner wall 14 include a recess “film” 38 of polytetrafluorethylene or polychlorotrifluoroethylene deposited on “woven wide-mesh cotton or glass fiber cloth.” *See*, col. 3, lines 45-49. Thus, the Wheeler patent teaches and requires that a pre-existing structure, i.e., woven wide-mesh cotton or glass fiber cloth, must first be in place, upon which a “recess film” (a thin layer) of polytetrafluorethylene or polychlorotrifluoroethylene is deposited on to the

cloth. Unlike Wheeler, the present invention does not require a pre-existing structure such as woven wide-mesh cloth, but instead teaches, requires and claims that the composite dynamic seal is a “filled” (compounded) seal, and the “filled” seal includes either an “elastomer” or “plastic” material, which may be additionally filled with other materials including aramid fiber HNBR, bronze filled PTFE, PTFE and carbon filled PTFE. In addition to not teaching, disclosing or suggesting the use of a “filled” composite dynamic seal, Wheeler does not teach, disclose or suggest the inclusion of an elastomer material of any kind being used or mounted to the inner wall 14. Wheeler only discloses the use of a polymeric material being deposited onto a woven wide-mesh cloth.

Moreover, Wheeler states that the purpose of the “film” of polymeric material is to provide a self-lubricating “low-friction” capability to the packing member. *See*, col. 4, lines 24-26. The present invention teaches the use of an elastomer filled or plastic filled composite dynamic seal, not a film, for use in high deflection and high friction applications. Specifically, the present invention elastomer filled or plastic filled composite dynamic seal provides flexibility to compensate for run-out, or eccentricity, to allow the filled composite dynamic seal to withstand a large amount of deflection and still maintain static interference in the packing bore while minimizing radial squeeze to reduce heat build up and reduce seal wear. The use of a “polymeric film,” as taught in Wheeler, could not be substituted for the present invention elastomer filled or plastic filled composite dynamic seal, since the “film” is specifically taught for “low-friction” applications and would quickly wear out, resulting in premature failure of the packing

member, especially if used in applications prone to large deflection and high friction as the present invention is intended.

Further, and as correctly pointed out by the Examiner, Wheeler does not disclose a plurality of ribs mounted within the channel as required in the present invention, but rather the need for a circular expander 28 (O-ring member) used in combination with a semi-circle shaped recess 34 required to hold the circular expander in place. The present invention requires neither of these features. Additionally, Wheeler requires other limitations including, but not limited, to an annular body including a plurality of spaced apart openings, which the present invention does not require. *See* col. 3, lines 54-57.

With regard to Iverson (4,685,685), Iverson discloses the use of “braces” 46, 48 which surround “trapezoidal cavities” 50. *See*, col. 2, lines 4-7. The ribs 14 of the present invention power end seal are not “braces” 46, 48 and are not intended to surround “trapezoidal cavities” (voids) 50. Additionally, the ribs 14 of the present invention power end seal provide flexible tension between the inner wall 16 and outer wall 18 of the power end seal 10 to maintain static interference in the packing gland (not shown). As distinguished from the present invention, and as specifically taught in Iverson, the trapezoidal voids 50 of the Iverson device collapse in a uniform manner when mechanical pressure is applied to the legs 26, 28 of the seal body 12. *See*, col. 2, lines 59-63. Iverson specifically teaches that the sole purpose of the braces 46, 48 are to create the trapezoidal voids 50, wherein the voids collapse in a uniform manner, proportional to the applied force. *See*, col. 2, lines 59-63. The braces 46, 48 as discussed in the Iverson reference do not function the same as the ribs 14 of the present invention,

and therefore it would not have been obvious for one of ordinary skill in the art at the time the invention was made to modify the seal of Wheeler with the braces taught by Iverson to provide flexible tension between the inner wall 16 and outer wall 18 of the power end seal 10 to maintain static interference in the packing gland (not shown) as taught and claimed in the present invention.

Thus, as now claimed in claims 25-39, neither the Wheeler reference, nor the Iverson reference, either taken together or separately, include all the limitations of the present claims. Further, the present claims now include the requirement that the composite dynamic seal be a “filled” composite dynamic seal and additionally, that the filled composite dynamic seal be “filled” with either “elastomer” or “plastic” in combination with other materials including aramid fiber HNBR, bronze filled PTFE, PTFE and carbon filled PTFE. None of these claimed features are discussed, taught or suggested in the Wheeler or Iverson references, and the Examiner specifically states in the Office Action of October 17, 2006, that Wheeler “does not disclose that the PTFE is a filled PTFE or that the composite is aramid fiber filled HNBR.”

In summation, it is clear that claims 25-39 are in no way obvious under 35 U.S.C. 103(a) as being unpatentable over Wheeler (4,526,385) in view of Iverson (4,685,684). Accordingly, Applicant respectfully requests allowance of claims 25-38.

#### OTHER ART CITED

Additionally, the Examiner has cited Schofield (5,163,692), Keifer (6,092,809), Atkinson (5,331,053), and Sakakibara (5,232,987) as prior art made of record and not relied upon, but considered pertinent to applicant's

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disclosure. Applicant appreciates the Examiner bringing these references to his attention and has reviewed these references. Applicant asserts that these references taken alone or in combination with any of the other cited references, do not foreclose the patentability of the present invention.

#### PETITION FOR EXTENSION OF TIME

Applicant herein petitions for an extension of time beyond the shortened statutory period for response of three months in the Office Action dated October 17, 2006. Enclosed herewith is a completed form PTO/SB/22 and the extension fee of \$60.00 for response within the first month after the shortened statutory period. The applicant qualifies as a small business entity under 37 C.F.R. §1.9(f) and evidence of such has been previously filed.

#### SUMMARY

Because the total number of claims and the number of independent claims for which a filing fee has been paid are not exceeded by the entry of this Amendment, no fee for additional claims is due.

In view of the foregoing, it is respectfully submitted that new claims 25-39 are allowable. It is believed that this case is now in condition for allowance and such action is respectfully requested.

Respectfully submitted,



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